

ART. XIV.—*Note on the Rev. Mr. Clarke's "Remarks," &c.*
By PROFESSOR MCCOY.

[Read before the Royal Society, Dec. 10th, 1860.]

I wish to avoid all irrelevant matter, and to re-direct attention to the real point at issue, namely:—Mr. Clarke holds and has always held that the "*Glossopteris beds*" associated with the coal of New South Wales are palæozoic, and belong to the same geological epoch as the underlying marine beds containing lower carboniferous animal remains. I hold and have always held that the aforesaid "*Glossopteris beds*" are *mesozoic*, and that there is a great geological interval separating them from the carboniferous or mountain limestone series of marine fossiliferous beds below them.

Mr. Clarke admits the identity I have dwelt upon between the "*Glossopteris beds*" of New South Wales, India, Africa, and Virginia. Baron de Zigno has drawn, in the present year, the relation much closer than before between all these and the plant beds of the oolitic series of the Venetian Alps and Yorkshire; and not one of the references of Mr. Clarke gives the slightest color to his view of their being palæozoic.

I should wish to stop here, but am constrained to touch the points in Mr. Clarke's "*Remarks*" in the order given.

1st. The remark that his reference to 6 instead of 23 species of plants in the *Glossopteris* beds of New South Wales alluded only to *Teniopteris*, may be compared with the original passage, bearing in mind that there are not six species of fossil Australian *Teniopteris* to refer to, but only one, and that disputed by him.

2nd. The remark on the absence of oolitic animal fossils in Virginia, overlooks the circumstance that I pointed out the fact in answer to his objection that we could not have oolitic plants in Australia, where no animal fossils of that age had been found, the age of the Virginian (Richmond) coal-beds being determined by the plants. The argumentative way in which Mr. Bunbury's saying "that the Richmond coal-field might as well be referred to the triassic as to the jurassic series" is put forth here, would seem to imply that the triassic was a palæozoic formation; it is, of course, unnecessary for me to say that this is not the case. Several triassic species

of plants are jurassic also, and both formations are equally mesozoic, and not palæozoic, as would be requisite to help Mr. Clarke's argument.

3rd. I am glad to see that, as I supposed, Mr. Oldham's observations are not so opposed to those of every one else as they at first seemed, and there is nothing in his remarks now quoted, confirmatory of Mr. Clarke's belief of the *Glossopteris* and *Vertebraria* beds being palæozoic. I do not feel called upon to give here any account of the labors of geologists among the mesozoic rocks of India, containing lower oolitic shells and plants; but neither they nor I referred to Cutch, and the question to be settled was whether the New South Wales *Glossopteris* beds were palæozoic or not.

4th. As to Morris's saying the African "*Dicynodon* beds" with *Glossopteris* may be either triassic or jurassic, I have only to repeat that both these are of the mesozoic age, for which I contend, and neither of them of the palæozoic age, for which Mr. Clarke contends.

5th. I did not "assail" Mr. Clarke for his quotation from Jukes' Manual, but I gave him a number of others from the same book, to show that the one he used was wrong; but now that Mr. Clarke says that he was aware of all these references, he does not explain how it was he came to recommend to the notice of this Society the single incorrect one, which he now shows he was fully aware only seemed to favor his side of the argument by the accidental error of the compiler.

6th. I did not accuse Mr. Clarke of misquoting Phillips' Geology of Yorkshire. I quoted a figure in it, and he wrote to deny its existence. I then laid the work with figure on the table, for the inspection of members, but bowed, of course, to the Rev. Mr. Clarke's positive assertion that that to which I referred had no existence. His remarks on the synonymy show that he has not had time nor opportunity to acquaint himself with the literature of the subject. A little study will, I have no doubt, enable him to perceive that what is now called *Tæniopteris vittata*, was first figured by Phillips under another name, not used by subsequent writers for his plant.

7th. I should have said that Mr. Dana *published* (instead of *got*) several more fossils beyond those known to me or previous writers, *after* I had published my paper "On the Zoology and Botany of the Rocks associated with the Coal-fields of Australia," without altering my views. A reference to Dana's papers on the subject, in Selliman's American Journal

of Science (about twelve or fourteen years ago) will show the numerous additional fossils which he got, all with the same geological significance, as I stated, though said to be simply an impossibility by Mr. Clarke.

8th. The matter of the *Lepidodendron* from the Manilla river (but not, as it should be for the argument, from the *Glossopteris* beds) will be well understood from my former "Commentary." On communicating, two days ago, with Mr. Selwyn, he reiterates his positive assertion that he told Mr. Clarke of the Gipps Land *Lepidodendron* in our Museum, and brought him to the case, and pointed it out to him; the insinuation of Mr. Clarke was that he discovered an important fossil in our national collection, of the nature of which we were ignorant. Mr. Selwyn is aware that I determined its true nature at the first glance, some years before, and that he expressly pointed it out and explained it to Mr. Clarke. Further, Mr. Selwyn (who was present) again authorises me to say that the account I have given in the "Commentary" exactly coincides with the distinct impression he received from Mr. Clarke's account of the coalpits at Stoney Creek; he remembers perfectly, as I do, the sections drawn with a pencil, by Mr. Clarke, illustrating his statement—that the pit was sunk through the plant beds near the surface into the marine beds, and that he had not been there, and had no evidence that the plant specimen had actually been *in situ* below the marine beds.

ART. XV.—*On the Multisection of an Angle by means of the Cycloid.* By the Hon. DAVID ELLIOT WILKIE, M.D., M.L.C.

[With a Plate.]

[Read before the Royal Society of Victoria, 25th June, 1860.]

THE writer of this paper feels that he owes some apology for venturing to offer a new illustration of the trisection or multisection of an angle. He has devoted very little time to mathematical studies, and his attention was directed, quite accidentally, to the subject of this paper.

It is well known that there is no mode by which this pro-